VASCULAR IMAGES

Asymptomatic internal carotid artery aneurysm

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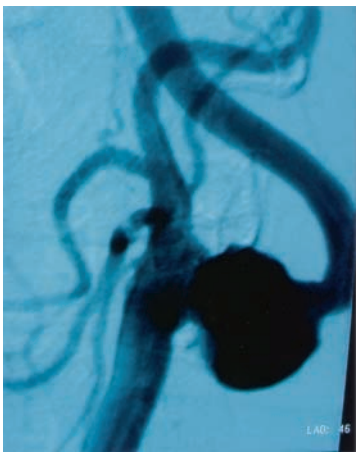
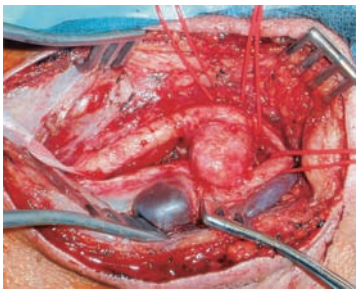
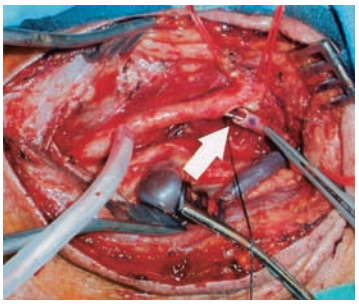


A



B, ***cover***



C

A 59-year-old asymptomatic man with a history of aortic and popliteal aneurysms was referred for evaluation of a left carotid bruit. Carotid duplex scanning revealed bilateral internal carotid artery (ICA) aneurysms with minimal intraluminal thrombus. The aneurysms measured 2 cm on the right and 3 cm on the left. Past medical history included controlled hypertension, hyperlipidemia, and prior cigarette use. There was no history of cerebrovascular symptoms, neck pain, or cervical trauma.

Angiography demonstrated that the aneurysms were fusiform and localized to the proximal internal carotid segments (A). No other aneurysms were identified in the cerebral circulation. Using a staged approach, the larger aneurysm in the left ICA was repaired first. The aneurysm and the carotid artery branches were easily exposed through a standard anterior cervical incision (B, cover). After aneurysm resection, a straight Argyle shunt was inserted between the common and internal carotid arteries (C, *arrow*). Direct, end-to-end repair was possible between the ICA and the common carotid artery due to ICA redundancy. The patient recovered uneventfully with all cranial nerves intact. Pathologic examination revealed minor atherosclerotic plaque disease associated with the aneurysm.

DISCUSSION

True aneurysms of the extracranial carotid arteries are rare, with the majority involving the common carotid bifurcation.[1] Approximately one third of these lesions are confined to the ICA, with an equal distribution between the proximal, middle, and distal segments. Atherosclerotic aneurysms tend to be located in the proximal ICA, whereas degenerative aneurysms associated with chronic dissection are located more distally.[2] Carotid aneurysms of the external carotid artery are less frequent but should also be considered in patients presenting with pulsatile masses in this area.

The natural history of carotid aneurysms is unknown, but results from small retrospective series suggest that nonoperative treatment is associated with a stroke risk as high as 50%.[2,3] Accordingly, most experts currently recommend repair of carotid aneurysms, even in the absence of symptoms. The use of shunts remains controversial; good results have been reported by groups who shunt selectively[1] and by others who never use shunts at all.[2] We found a straight shunt to be helpful in maintaining alignment of the redundant ICA. The small caliber of the shunt would also have permitted insertion through a vein graft if an interposition had been necessary.

Direct repair remains the gold standard for treatment of carotid artery aneurysms. While operative results are generally good, cranial nerve dysfunction has been reported in up to 44% of patients.[2] To date, there has been little experience with endoluminal exclusion techniques for these rare lesions. However, given the promising results that have been reported for pseudoaneurysms of the distal ICA, can endovascular therapy of more proximal lesions be far behind?

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2. Rosset E, Albertini J, Magnan PE, Thomassin JM, Branchereau A. Surgical teatment of extracranial internal carotid aneurysms. J Vasc Surg 2000;31:713-23.
3. Zwolak RM, Whitehouse WM, Knake JE, Bernfeld BD, Zelenock GB, Cronenwett JL, et al. Atherosclerotic extracranial carotid artery aneurysms. J Vasc Surg 1984;1:415-22.